PLAN PREPARATION

TRANS ASSOCIATES : Mark C. Szewcow, P.E.
Judith A. Bishop, P.E.
Edward Farer

STA	DISTRICT	COUNTY	TOWNSHIP	BOROUGH	ROUTE	SECTION	TOTAL
	10	BUTLER	CONCORD	———	0038	ITS	
			WASHINGTON				

STATE PROJECT NUMBER

SYS	S.R. or W.O.	SPUR	PHASE	SECTION	DIST.	CO.
0	OCC10	0	7	ITS	10	2

CMS #102184

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF TRANSPORTATION

DRAWINGS
FOR
CONSTRUCTION
OF
INSTALLATION OF I.T.S. WARNING DEVICES

NOTE: S.R. 0038 PREVIOUSLY KNOWN AS L.R. 75.

STATE ROUTE 0038 **SECTION** ITS

IN BUTLER **COUNTY**

FROM STA. 635+62 TO STA. 857+44 LENGTH 3,957 FT. 0.75 MI.

FROM SEG. 0220 OFFSET 2526 TO SEG. 0320 OFFSET 1039

SCALE

HORIZONTAL 0 25 50 FEET

DESIGN DESIGNATION

TRAFFIC DATA	S.R.0038
HIGHWAY CLASSIFICATION	Minor Arterial
DESIGN SPEED	40 M.P.H.
PAVEMENT WIDTH	22'
SHOULDER WIDTH	Variable
CURRENT A.D.T.	4,000 (2001)
DESIGN YEAR A.D.T.	4,800 (2021)
D.H.V.	480
D	50%
T	5%

PREPARED BY:

Trans Associates

MARK C. SZEWCOW

REGISTERED PROFESSIONAL ENGINEER

P.E. NUMBER 050343-E DATE 4/4/01

RECOMMENDED DATE: 4/11/01
DISTRICT ENGI

RECOMMENDED DATE: 4-19-
DEPUTY SECRE

APPROVED DATE: 4-19-
SECRETARY OF TRANSPORTATION
(ON BEHALF OF THE GOVERNOR AS WELL AS HIMSELF)

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
10-0	BUTLER	0038	ITS	2 OF
CONCORD TOWNSHIP AND WASHINGTON TOWNSHIP				

REVISION NUMBER	REVISIONS	DATE

GENERAL NOTES

ALL WORK CONTEMPLATED ON THIS PROJECT IS CONFINED WITHIN THE EXISTING HIGHWAY RIGHT-OF-WAY

THE LEGAL RIGHT-OF-WAY ON S.R.0038 FROM STA. 635+62 TO STA. 655+88 IS VARIABLE IN WIDTH, 50 FEET TO 65 FEET, BASED ON PLAN OF L.R. 75, SIGNED BY THE GOVERNOR ON FEBRUARY 11, 1929.

THE LEGAL RIGHT-OF-WAY ON S.R.0038 FROM STA. 837+13 TO STA. 857+44 IS VARIABLE IN WIDTH, 50 FEET TO 75 FEET, BASED ON PLAN OF L.R. 75, SIGNED BY THE GOVERNOR ON SEPTEMBER 3, 1929.

CONSTRUCT PROJECT IN ACCORDANCE WITH SPECIFICATIONS, PUBLICATION 408, DATED 2000.

DO NOT INTERFERE WITH THE OPERATION OF ANY FIRE HYDRANTS, FIRE CALL BOXES OR POLICE CALL BOXES.

THE DEPARTMENT OF TRANSPORTATION DOES NOT GUARANTEE THE ACCURACY OF THE LOCATION FOR EXISTING SUBSURFACE UTILITY STRUCTURES SHOWN ON THE PLANS, NOR DOES THE DEPARTMENT GUARANTEE THAT ALL SUBSURFACE STRUCTURES ARE SHOWN.

DETAILS OTHER THAN THOSE INDICATED, ARE ON THE FOLLOWING STANDARD DRAWINGS:

STANDARD	APPROVED
TC-7600 (3 SHEETS)	MAY 18, 1998
TC-8700C (8 SHEETS)	AUGUST 1, 1997
TC-8702B (11 SHEETS)	AUGUST 1, 1997
TC-7801 (4 SHEETS)	JUNE 30, 1989
TC-7802	JUNE 30, 1989
TC-7803	JUNE 30, 1989
TC-7804 (2 SHEETS)	JUNE 30, 1989
TC-7805	JUNE 30, 1989
TC-7806 (2 SHEETS)	JUNE 30, 1989
RC-70M (5 SHEETS)	APRIL 28, 2000
RC-82M	APRIL 28, 2000

MAINTENANCE AND PROTECTION OF TRAFFIC IS TO ADHERE TO PUBLICATION 203, FIGURES 5,7,8,10A AND/OR 10B FOR SHORT-TERM SIGNING AND FIGURE 25 FOR LONG-TERM SIGNING.

CONTRACTOR IS TO EXERCISE CAUTION WHEN PLACING SIGN SUPPORT FOUNDATIONS NEAR CATCH BASINS OR OTHER DRAINAGE FACILITIES.

S.R.0038 PREVIOUSLY KNOWN AS L.R.75.

HORIZONTAL CONTROL BASED ON THE PLAN L.R. 75 SECTION 5529.

TOPOGRAPHIC SURVEY IS BY CONSULTANT SURVEY.

LIST OF PUBLIC UTILITIES FOR S.R. 0038, SEC. ITS, CONCORD TOWNSHIP

— G —	Columbia Gas Transmission Corp. Attn: Mr. Marty Burkey	316 Shadyrest Road (724) 758-5507	Ellwood City, PA 16117
— G —	National Fuel/National Fuel Supply Attn: Mr. Tim Miles	122 North Main Street PO Box 293 (724) 445-3223	Chicora, PA 16025
— T —	Sprint Attn: Ms. Karen M. Kriley	218 S.Washington Street (724)284-7286	Butler, PA 16001
— E —	Allegheny Power Company Attn: Mr. Kevin Baker	501 Hansen Avenue (724) 284-3537	Butler, PA 16001
	PA One Call System, Inc. SERIAL NO. 0571100	1-800-242-1775	

LIST OF PUBLIC UTILITIES FOR S.R. 0038, SEC. ITS, WASHINGTON TOWNSHIP

— G —	Columbia Gas of PA Inc. Attn: Mr. Gregory Kriebel	1111 Prospect Street (724) 867-2393	Emlenton, PA 16373
— E —	Allegheny Power Company Attn: Mr. Kevin Baker	501 Hansen Avenue (724) 284-3537	Butler, PA 16001
— T —	Sprint Attn: Ms. Helen Pernice	1201 Walnut Bottom Road (717)245-6312	Carlisle, PA 17013
	PA One Call System, Inc. SERIAL NO. 0430906	1-800-242-1776	

TABULATION OF OVERALL LENGTH
S.R.0038, SECTION ITS

STA. 635+62 TO STA. 857+44 = 22,182 FT. = 4.20 MI.

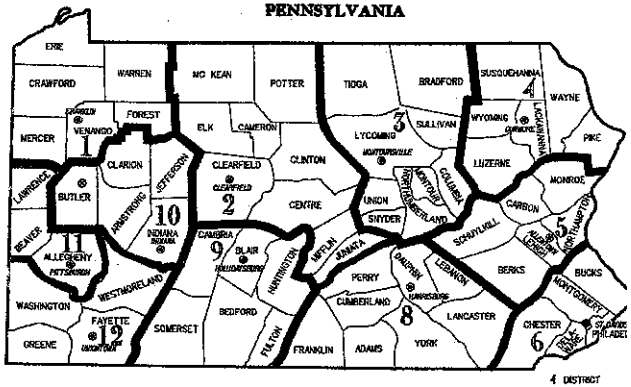
TABULATION OF CONSTRUCTION LENGTH
S.R.0038, SECTION ITS

STA. 636+12 TO STA. 655+88 = 1,976 FT. = 0.37 MI.
STA. 837+13 TO STA. 856+94 = 1,981 FT. = 0.38 MI.
TOTAL CONSTRUCTION LENGTH = 3,957 FT. = 0.75 MI.

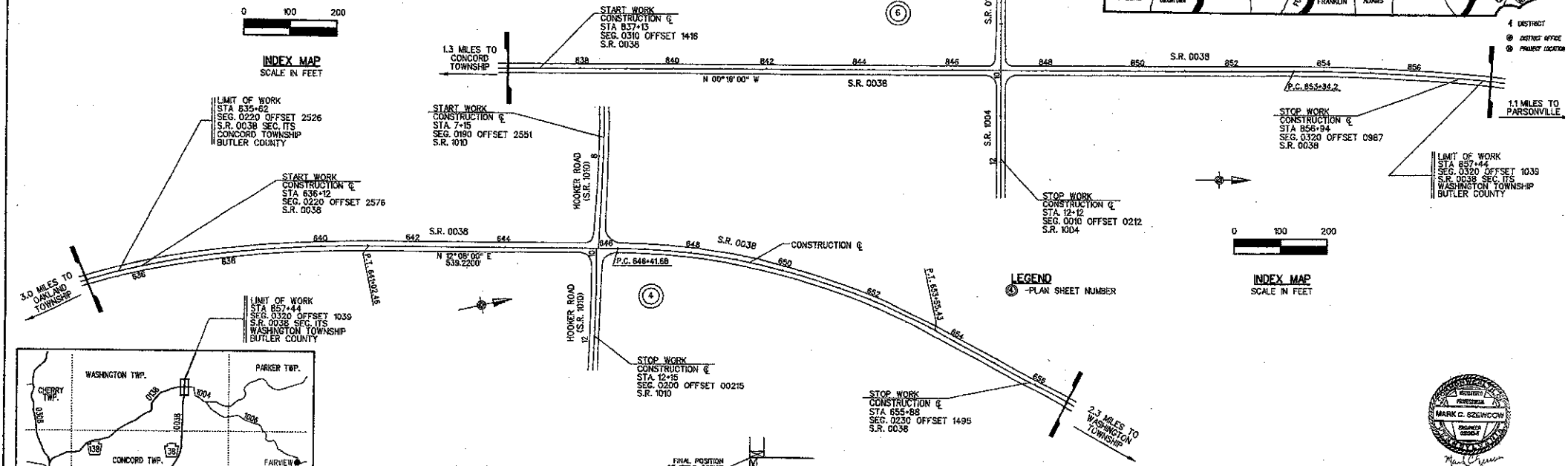
TABULATION OF SEGMENT EQUALITIES

SEGMENT	= STATION
220, OFFSET 2526	= 635+62
230	= 640+93
320	= 847+05
320, OFFSET 1039	= 857+44

PENNSYLVANIA



4 DISTRICT
DISTRICT OFFICE
PROJECT LOCATION



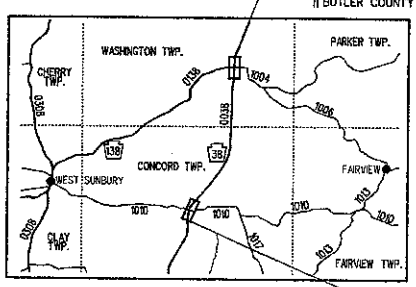
INDEX MAP
SCALE IN FEET

0 100 200

INDEX MAP
SCALE IN FEET

0 100 200

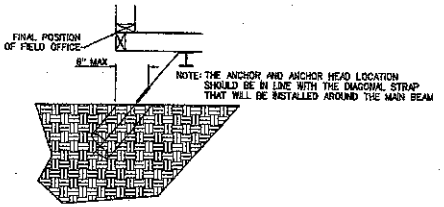
LEGEND
(4) -PLAN SHEET NUMBER



LOCATION MAP

0 1.0 2.0
SCALE IN MILES

- STATE HIGHWAY
- COUNTY/LOCAL ROAD
- PROJECT LOCATION
- MUNICIPAL BOUNDARY



FIELD OFFICE ANCHORING SYSTEM
INCIDENTAL TO ITEM 0609-0004

STRAIGHT LINE DIAGRAM DATA		
STATE ROUTE	LIMITS OF CONSTRUCTION	
	CONSTR. STA.	SEGMENT/OFFSET
S.R. 1004	10+00 TO 12+12	10/0 TO 10/212
S.R. 1010	7+15 TO 12+15	190/2551 TO 200/215
S.R. 0138	7+78 TO 10+00	210/2759 TO 210/2981

MARK C. SZEWCOW
ENGINEER

INDEX OF DRAWINGS

DESCRIPTION	SHEET
TITLE SHEET	1
INDEX MAP, LOCATION MAP, GENERAL NOTES	2
SUMMARY SHEET	3
TABULATION SHEETS	5,7
WARNING DEVICE PLAN	4,6

DISTRICT	COUNTY	ROUTE	SECTION
10-0	BUTLER	0038	L.T.S.
CONCORD AND WASHINGTON TOWNSHIPS			

REVISION NUMBER	REVISIONS	DA

SUMMARY SHEET

Ⓐ - SEE SPECIAL PROVISIONS

QUANTITY	ITEM NUMBER / UNIT		DESIGN NUMBER	FOR TAB SEE SHEET
----	0608-0001 L.S.	MOBILIZATION		NO TAB
----	0609-0004 L.S.	INSPECTORS FIELD OFFICE AND INSPECTION FACILITIES, TYPE C Ⓐ		NO TAB
----	0845-0002 PDA	UNFORSEEN WATER POLLUTION CONTROL		NO TAB
----	0901-0001 L.S.	MAINTENANCE AND PROTECTION OF TRAFFIC DURING CONSTRUCTION Ⓐ		NO TAB
100	0901-0240 S.F.	ADDITIONAL TRAFFIC CONTROL SIGNS		NO TAB
31	0910-0005 EACH	JUNCTION BOX, JB-12		5,7
72	0931-0001 S.F.	POST MOUNTED SIGNS, TYPE B		5,7
56	0935-0001 S.F.	POST MOUNTED SIGNS, TYPE F		5,7
8	4951-3102 EACH	TRAFFIC SIGNAL SUPPORT, 20' STRAIN POLE, 2,000 POUNDS DESIGN TENSION BREAKAWAY Ⓐ		5,7
4	4951-4010 EACH	TRAFFIC SIGNAL SUPPORT, 10' PEDESTAL BREAKAWAY Ⓐ		5,7
2,196	0954-0011 L.F.	1 INCH CONDUIT		5,7
4,850	0954-0012 L.F.	2 INCH CONDUIT		5,7
3,935	0954-0151 L.F.	TRENCH AND BACKFILL, TYPE I		5,7
1,067	0954-0152 L.F.	TRENCH AND BACKFILL, TYPE II		5,7
179	0954-0154 L.F.	TRENCH AND BACKFILL, TYPE IV		5,7
5,713	0954-0202 L.F.	SIGNAL CABLE, 14 AWG, 5 CONDUCTOR		5,7

QUANTITY	ITEM NUMBER / UNIT		DESIGN NUMBER	FOR TAB SEE SHEET
2	0954-0402 EACH	ELECTRICAL SERVICE, TYPE B		5,7
13,620	0956-0001 L.F.	DETECTOR LEAD-IN CABLE		5,7
1,526	0956-0101 L.F.	LOOP SENSOR		5,7
29	0956-0131 EACH	LOOP AMPLIFIER, 2 CHANNEL, RACK MOUNTED		5,7
200	0963-0001 S.F.	PAVEMENT MARKING REMOVAL		5,7
9	9000-0001 EACH	FIBER-OPTIC SIGN CROSS ROAD WITH VEHICLE ICON Ⓐ		5,7
5	9000-0002 EACH	FIBER-OPTIC SIGN TRAFFIC AHEAD Ⓐ		5,7
2	9000-0003 EACH	COLLISION AVOIDANCE CONTROLLER ASSEMBLY, TYPE I MOUNTING, WITH MODEM AND PHONE COMMUNICATIONS LINE Ⓐ		5,7
2	9000-0004 EACH	COLLISION AVOIDANCE CONTROLLER SOFTWARE Ⓐ		5,7
5	9000-0005 EACH	FIBER-OPTIC SIGN, CROSSING TRAFFIC Ⓐ		5,7
---	9000-0006 L.S.	TESTING AND MAINTENANCE OF COLLISION AVOIDANCE SYSTEM Ⓐ		NO TAB
1	9000-0007 EACH	CLOSED LOOP SYSTEM FOR COLLISION AVOIDANCE SYSTEM Ⓐ		5
400	9000-0008 L.F.	4" WHITE EPOXY RESIN PAVEMENT MARKER Ⓐ		5,7
1,300	9000-0009 L.F.	4" YELLOW EPOXY RESIN PAVEMENT MARKER Ⓐ		5,7
55	9000-0010 L.F.	24" WHITE EPOXY RESIN PAVEMENT MARKER Ⓐ		5,7

QUANTITY	ITEM NUMBER / UNIT	DESCRIPTION	DESIGN NUMBER	FOR TAB SEE SHEET
----	9108-0003 L.S.	NARRATIVE SCHEDULE Ⓐ		NO TAB

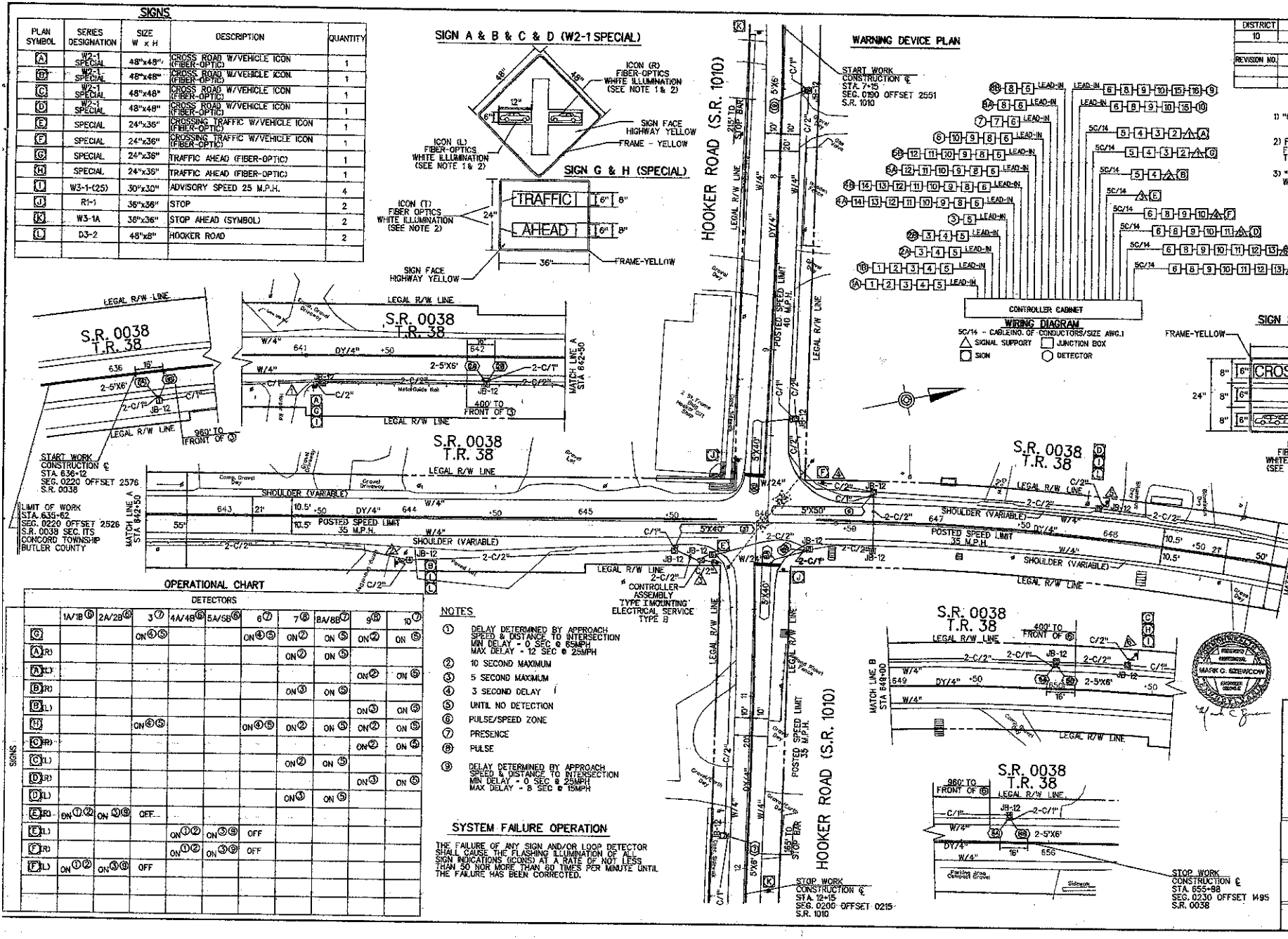
QUANTITY	ITEM NUMBER / UNIT	DESCRIPTION	DESIGN NUMBER	FOR TAB SEE SHEET

SIGNS

PLAN SYMBOL	SERIES DESIGNATION	SIZE W x H	DESCRIPTION	QUANTITY
A	W2-1 SPECIAL	48"x48"	CROSS ROAD W/VEHICLE ICON (FIBER-OPTIC)	1
B	W2-1 SPECIAL	48"x48"	CROSS ROAD W/VEHICLE ICON (FIBER-OPTIC)	1
C	W2-1 SPECIAL	48"x48"	CROSS ROAD W/VEHICLE ICON (FIBER-OPTIC)	1
D	W2-1 SPECIAL	48"x48"	CROSS ROAD W/VEHICLE ICON (FIBER-OPTIC)	1
E	SPECIAL	24"x36"	CROSSING TRAFFIC W/VEHICLE ICON (FIBER-OPTIC)	1
F	SPECIAL	24"x36"	CROSSING TRAFFIC W/VEHICLE ICON (FIBER-OPTIC)	1
G	SPECIAL	24"x36"	TRAFFIC AHEAD (FIBER-OPTIC)	1
H	SPECIAL	24"x36"	TRAFFIC AHEAD (FIBER-OPTIC)	1
I	W3-1-(25)	30"x30"	ADVISORY SPEED 25 M.P.H.	4
J	R1-1	36"x36"	STOP	2
K	W3-1A	36"x36"	STOP AHEAD (SYMBOL)	2
L	D3-2	48"x8"	HOOKER ROAD	2

DISTRICT	COUNTY	ROUTE	SECTION	
10	BUTLER	0038	ITS	4
CONCORD TOWNSHIP				

REVISION NO.	REVISION	DAT



GENERAL NOTES

1) "CAR ICON" TO BE ILLUMINATED IN A STEADY MOD WHEN ON AS SPECIFIED IN THE OPERATIONAL CH

2) FIBER-OPTIC BUNDLES TO BE ARRANGED SO THAT FAILURE OF ONE (1) LAMP WILL NOT EXTINGUISH THE LINE OF THE MESSAGE OR A PORTION THERE

3) "CAR ICON" TO BE ILLUMINATED SEQUENTIALLY WHEN ON AS SPECIFIED IN THE OPERATIONAL CHA

LEGEND

- POLE W/FIBER-OPTIC SIG
- POST MOUNTED SIGN
- VEHICLE DETECTOR
- JUNCTION BOX
- C/2" — CONDUIT/SIZE
- CONTROLLER ASSEMBLY
- W/4" - SOLID WHITE LINE/WIDT
- BW/4" - BROKEN WHITE LINE/WI
- Y/4" - SOLID YELLOW LINE/WI
- BY/4" - BROKEN YELLOW LINE/
- FLASHER DEVICES (FOR INFORMATION ONLY)

OPERATIONAL CHART

SIGNS	DETECTORS 1A/1B ⑥	2A/2B ⑥	3 ⑦	4A/4B ⑥	5A/5B ⑥	6 ⑦	7 ⑥	8A/8B ⑦	9 ⑥	10 ⑦
C			ON ④⑤			ON ④⑤	ON ②	ON ⑤	ON ②	ON ⑤
A (R)							ON ②	ON ⑤		
A (L)									ON ②	ON ⑤
B (R)							ON ③	ON ⑤		
B (L)									ON ③	ON ⑤
H			ON ④⑤			ON ④⑤	ON ②	ON ⑤	ON ②	ON ⑤
G (R)									ON ②	ON ⑤
G (L)							ON ②	ON ⑤		
D (R)									ON ③	ON ⑤
D (L)							ON ③	ON ⑤		
E (R)	ON ①②	ON ③⑨	OFF							
E (L)				ON ①②	ON ③⑨	OFF				
F (R)				ON ①②	ON ③⑨	OFF				
F (L)	ON ①②	ON ③⑨	OFF							

NOTES

1. DELAY DETERMINED BY APPROACH SPEED & DISTANCE TO INTERSECTION MIN DELAY - 0 SEC @ 65MPH MAX DELAY - 12 SEC @ 25MPH
2. 10 SECOND MAXIMUM
3. 5 SECOND MAXIMUM
4. 3 SECOND DELAY
5. UNTIL NO DETECTION
6. PULSE/SPEED ZONE
7. PRESENCE
8. PULSE
9. DELAY DETERMINED BY APPROACH SPEED & DISTANCE TO INTERSECTION MIN DELAY - 0 SEC @ 25MPH MAX DELAY - 8 SEC @ 15MPH

SYSTEM FAILURE OPERATION

THE FAILURE OF ANY SIGN AND/OR LOOP DETECTOR SHALL CAUSE THE FLASHING ILLUMINATION OF ALL SIGN INDICATIONS (ICONS) AT A RATE OF NOT LESS THAN 50 NOR MORE THAN 60 TIMES PER MINUTE UNTIL THE FAILURE HAS BEEN CORRECTED.

County: BUTLER

Municipality: CONCORD TOWNSHIP

Intersection: S.R. 0038 AND HOOKER ROAD (S.R. 1010)

Recommended:

District Traffic Engineer

Scale 0 25 50

DISTRICT	COUNTY	ROUTE	SECTION
10-0	BUTLER	0038	I.T.S.
CONCORD TOWNSHIP			

REVISION NUMBER	REVISIONS	DATE

WARNING DEVICE TABULATION

TRENCH, CONDUIT, JUNCTION BOX, ELECTRICAL ITEMS

LOCATION (ITEM NUMBER / UNIT)	JUNCTION BOX, JB-12 (0810-0005 EA.)	1 INCH CONDUIT (0954-0001 L.F.)	2 INCH CONDUIT (0954-0002 L.F.)	TRENCH AND BACKFILL, TYPE I (0954-0151 L.F.)	TRENCH AND BACKFILL, TYPE II (0954-0152 L.F.)	TRENCH AND BACKFILL, TYPE IV (0954-0154 L.F.)	SIGNAL CABLE, 14 AWG, 9 CONDUCTOR (0965-0009 L.F.)	ELECTRICAL SERVICE, TYPE B (0864-0400 EA.)	DETECTOR LEAD-IN CABLE (0956-0001 L.F.)
1A AND 1B TO 1		14			14				
1	1								
1 TO 2		488		418	40	30			
2	1								
2 TO 1			5	5					
2 TO 3			186	93					
2A AND 2B TO 3		10			10				
3	1								
3 TO 4			390	195					
4	1								
4 TO 2			7	7					
4 TO 5			300	75	75				
5	1								
5 TO 3		7			7				
5 TO CC			30	15					
CC TO 4			8	8					
CC TO 6			8	8					
6	1								
6 TO 8			110	10		45			
8	1								
8 TO 8A AND 8B		15		15					
8 TO 9			70	35					
9	1								
9 TO 10			64		10	22			
10	1								
10 TO 6		8			8				
10 TO 4			30	30					
10 TO 11			260	118	12				
11	1								
11 TO 5			5	5					
11 TO 12			410	170	35				
12	1								
12 TO 5A AND 5B		10			10				
12 TO 13			40	20					
13	1								
13 TO 6			7	7					
13 TO 14		542		417	125				
14	1								
14 TO 4A AND 4B		10			10				
6 TO 7			165	125	40				
7	1								
7 TO 7		5		5					
10 TO 15			80	55	25				
15 TO 10		5		5					
15	1								
15 TO 16			190	145	45				
16	1								
16 TO 9		5		5					
SR 38 & SR 1010 (HOOKER ROAD) SEE WIRING DIAGRAM							2,617	1	6,660
TOTALS	16	1,119	2,363	1,989	466	97	2,617	1	6,660

DETECTORS

AMPLIFIER

ITEM NUMBER / UNIT	DESCRIPTION	QUAN.	LOCATION	OPERATION
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PULSE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PULSE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PULSE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PULSE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PRESENCE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PULSE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PULSE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PULSE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PULSE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PULSE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PRESENCE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PULSE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PRESENCE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PRESENCE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PULSE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PRESENCE

SENSOR

ITEM NUMBER / UNIT	DESCRIPTION	SEQ. NO.	QUAN.	SIZE	LAYOUT TYPE	ROUTE	STA.	SIDE	OFFSET
0956-0101 L.F.	LOOP SENSOR	1A	32	5'x6'	II	0038	636+15	RT.	5'
0956-0101 L.F.	LOOP SENSOR	1B	32	5'x6'	II	0038	636+31	RT.	5'
0956-0101 L.F.	LOOP SENSOR	2A	30	5'x6'	II	0038	641+97	RT.	5'
0956-0101 L.F.	LOOP SENSOR	2B	30	5'x6'	II	0038	642+13	RT.	5'
0956-0101 L.F.	LOOP SENSOR	3	100	5'x40'	II	0038	645+75	RT.	5'
0956-0101 L.F.	LOOP SENSOR	4A	30	5'x6'	II	0038	655+69	LT.	5'
0956-0101 L.F.	LOOP SENSOR	4B	30	5'x6'	II	0038	655+85	LT.	5'
0956-0101 L.F.	LOOP SENSOR	5A	30	5'x6'	II	0038	649+87	LT.	5'
0956-0101 L.F.	LOOP SENSOR	5B	30	5'x6'	II	0038	650+03	LT.	5'
0956-0101 L.F.	LOOP SENSOR	6	120	5'x50'	II	0038	648+30	LT.	5'
0956-0101 L.F.	LOOP SENSOR	7	37	5'x6'	II	1010	11+88	LT.	5'
0956-0101 L.F.	LOOP SENSOR	8A	110	5'x40'	II	1010	10+35	LT.	5'
0956-0101 L.F.	LOOP SENSOR	8B	32	5'x6'	II	0038	648+13	RT.	15'
0956-0101 L.F.	LOOP SENSOR	9	38	5'x6'	II	1010	7+60	RT.	5'
0956-0101 L.F.	LOOP SENSOR	10	108	5'x40'	II	1010	9+80	RT.	5'

MISCELLANEOUS

ITEM NUMBER / UNIT	DESCRIPTION	QUAN.	LOCATION	REMARKS
9000-0001 EA.	FIBER-OPTIC SIGN (CROSSROAD W/VEHICLE ICON)	5	2, 1, 5, 6	1 SPARE TO BE RETAINED BY THE DEPARTMENT
9000-0002 EA.	FIBER-OPTIC SIGN (TRAFFIC AHEAD)	3	1, 6	1 SPARE TO BE RETAINED BY THE DEPARTMENT
9000-0003 EA.	COLLISION AVOIDANCE CONTROLLER ASSEMBLY TYPE I MOUNTING, WITH MODEM AND PHONE COMMUNICATIONS LINE	1	CC	
9000-0004 EA.	COLLISION AVOIDANCE CONTROLLER SOFTWARE	1	CC	
9000-0005 EA.	FIBER-OPTIC SIGN (CROSSING TRAFFIC)	3	4, 3	1 SPARE TO BE RETAINED BY THE DEPARTMENT
9000-0007 EA.	CLOSED LOOP SYSTEM FOR COLLISION AVOIDANCE SYSTEM	1	AS DIRECTED	

S.R. 0038 AND S.R. 1010 (HOOKER ROAD)

PAVEMENT MARKINGS

ITEM NUMBER / UNIT	DESCRIPTION	QUAN.
0963-0001 S.F.	PAVEMENT MARKING REMOVAL	100
9000-0008 L.F.	4" WHITE EPOXY RESIN PAVEMENT MARKER	200
9000-0009 L.F.	4" YELLOW EPOXY RESIN PAVEMENT MARKER	900
9000-0010 L.F.	24" WHITE EPOXY RESIN PAVEMENT MARKER	30

SIGNS

PLAN SYMBOL	SERIES DESIG.	DESCRIPTION	SIZE	SQ. FT. EA.	QUANTITY	0831-0001 POST MOUNTED SIGNS, TYPE B S.F.	0831-0001 POST MOUNTED SIGNS, TYPE F S.F.
I	W3-1-(25)	ADVISORY SPEED 25 M.P.H.	30"x30"	6.25	4		25
J	R1-1	STOP	36"x36"	9	2	18	
K	W3-1A	STOP AHEAD (SYMBOL)	36"x36"	9	2	18	
L	D3-2	HOOKER ROAD	48"x8"	2.67	2		5.33
TOTALS						36	30.33

TRAFFIC SIGNAL SUPPORTS

STRUCT. NO.	ITEM NUMBER / UNIT	DESCRIPTION	QUAN.	ROUTE	STATION	SIDE	OFFSET
1	4951-3102 EACH	TRAFFIC SIGNAL SUPPORT, 20' STRAIN POLE, 2000 LBS DESIGN TENSION (BREAKAWAY)	1	0038	645+7	RT	19'
2	4951-3102 EACH	TRAFFIC SIGNAL SUPPORT, 20' STRAIN POLE, 2000 LBS DESIGN TENSION (BREAKAWAY)	1	0038	643+93	RT	25'
3	4951-4010 EACH	TRAFFIC SIGNAL SUPPORT 10' PEDESTAL (BREAKAWAY)	1	0038	645+75	RT	23'
4	4951-4010 EACH	TRAFFIC SIGNAL SUPPORT 10' PEDESTAL (BREAKAWAY)	1	0038	645+34	LT	23'
5	4951-3102 EACH	TRAFFIC SIGNAL SUPPORT, 20' STRAIN POLE, 2000 LBS DESIGN TENSION (BREAKAWAY)	1	0038	647+95	LT	22'
6	4951-3102 EACH	TRAFFIC SIGNAL SUPPORT, 20' STRAIN POLE, 2000 LBS DESIGN TENSION (BREAKAWAY)	1	0038	650+40	LT	23'

STRUCT. NO.	MAST ARM: ARM "A" H	K	L	SIGNAL LOCATION M	N	O	P	SIGN LOCATION R	S	T	W	ARM "B" L	SIGNAL LOCATION W	N	O	P	SIGN LOCATION R	S	T	Y	ARM "C" L	X	Z	STRAIN POLE: SHAFT H	DESIGN TENSION	K	STRUCT. TO STRUCT.	SIGNAL LOCATION M	N	O	P	SIGN LOCATION R	S	T	ARM "C" L	X	Z	PEDESTAL: SHAFT H	K
1																								20'	2,000	7'														
2																								20'	2,000	7'														
3																																							10'	7'
4																																							10'	7'
5																								20'	2,000	7'														
6																								20'	2,000	7'														

NOTE: VERIFY FOUNDATION ELEVATIONS TO INSURE PROPER VERTICAL CLEARANCE.

MARK C. SZEWCOW

DISTRICT	COUNTY	ROUTE	SECTION
10-0	BUTLER	0038	I.T.S. 7
	WASHINGTON TOWNSHIP		

REVISION NUMBER	REVISIONS	DATE

WARNING DEVICE TABULATION

S.R. 0038 AND
S.R. 0138/1004

TRENCH, CONDUIT, JUNCTION BOX, ELECTRICAL ITEMS

LOCATION	JUNCTION BOX, JB-12 (0855-0001 EACH)	1 INCH CONDUIT (0954-0001 L.F.)	2 INCH CONDUIT (0954-0002 L.F.)	TRENCH AND BACKFILL, TYPE I (0954-0003 L.F.)	TRENCH AND BACKFILL, TYPE II (0954-0052 L.F.)	TRENCH AND BACKFILL, TYPE IV (0954-0054 L.F.)	SIGNAL CABLE, 14 AWG, 5 CONDUCTOR (0954-0102 L.F.)	ELECTRICAL SERVICE, TYPE B (0854-2400 EACH)	DETECTOR LEAD-IN CABLE (0855-0001 L.F.)
1A AND 1B TO 1		14			14				
1	1								
1 TO 2		535		535					
2	1								
2 TO A			5	5					
2 TO 3			96	48					
2A AND 2B TO 3		12			12				
3	1								
3 TO 4			432	196	20				
4	1								
4 TO A			5	5					
4 TO 5			276	123	15				
5	1								
5 TO 3		6			6				
5 TO 6			154	27	16	35			
6	1								
6 TO A			5		5				
6 TO 8			62		31				
8	1								
8 TO 6		6			6				
8 TO 9			480	185	55				
9	1								
9 TO 10			70		13	22			
10	1								
10 TO A			5	5					
10 TO 11			200	55	45				
11	1								
11 TO 5A AND 5B		10			10				
11 TO 12			244	219	25				
12	1								
12 TO A			6	6					
12 TO 13		460		350	110				
13	1								
13 TO 4A AND 4B		14			14				
6 TO 7			170		170				
7	1								
7 TO 7		5			5				
5 TO 14			90		20	25			
14	1								
14 TO CC			10	5					
CC TO A			7	7					
14 TO 10		10			10				
14 TO 15			170	170					
15	1								
15 TO 9		5		5					
SR 38 & SR 138/1004 SEE WIRING DIAGRAM							3,096	1	6,960
TOTALS	15	1,077	2,487	1,946	601	82	3,096	1	6,960

DETECTORS

AMPLIFIER

ITEM NUMBER UNIT	DESCRIPTION	QUAN.	LOCATION	OPERATION
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PULSE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PULSE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PULSE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PULSE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PRESENCE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PULSE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PULSE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PULSE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PULSE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PRESENCE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PULSE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PRESENCE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PULSE
0956-0131 EA.	LOOP AMPLIFIER, 2 CHANNEL RACK MOUNTED	1	CC	PRESENCE

SENSOR

ITEM NUMBER UNIT	DESCRIPTION	SEN. NO.	QUAN.	SIZE	LAYOUT TYPE	ROUTE	STA.	SIDE	OFFSET
0956-0101 L.F.	LOOP SENSOR	1A	32	5'x6'	II	0038	838+75	RT	5'
0956-0101 L.F.	LOOP SENSOR	1B	32	5'x6'	II	0038	838+91	RT	5'
0956-0101 L.F.	LOOP SENSOR	2A	32	5'x6'	II	0038	842+68	RT	5'
0956-0101 L.F.	LOOP SENSOR	2B	32	5'x6'	II	0038	843+14	RT	5'
0956-0101 L.F.	LOOP SENSOR	3	100	5'x40'	II	0038	846+75	RT	5'
0956-0101 L.F.	LOOP SENSOR	4A	32	5'x6'	II	0038	855+15	LT	5'
0956-0101 L.F.	LOOP SENSOR	4B	32	5'x6'	II	0038	855+31	LT	5'
0956-0101 L.F.	LOOP SENSOR	5A	32	5'x6'	II	0038	850+92	LT	5'
0956-0101 L.F.	LOOP SENSOR	5B	32	5'x6'	II	0038	851+08	LT	5'
0956-0101 L.F.	LOOP SENSOR	6	110	5'x40'	II	0038	847+30	LT	5'
0956-0101 L.F.	LOOP SENSOR	7	28	5'x6'	II	0138	10+40	LT	5'
0956-0101 L.F.	LOOP SENSOR	8	105	5'x40'	II	0138	11+80	LT	5'
0956-0101 L.F.	LOOP SENSOR	9	28	5'x6'	II	0138	8+16	RT	5'
0956-0101 L.F.	LOOP SENSOR	10	110	5'x40'	II	0138	9+85	RT	5'

PAVEMENT MARKINGS

ITEM NUMBER UNIT	DESCRIPTION	QUAN.
0963-0001 S.F.	PAVEMENT MARKING REMOVAL	100
9000-0008 L.F.	4" WHITE EPOXY RESIN PAVEMENT MARKER	200
9000-0009 L.F.	4" YELLOW EPOXY RESIN PAVEMENT MARKER	400
9000-0010 L.F.	24" WHITE EPOXY RESIN PAVEMENT MARKER	25

SIGNS

PLAN SYMBOL	SERIES DESIG.	DESCRIPTION	SIZE	SQ. FT. EA.	QUANTITY	0831-0001 POST MOUNTED SIGNS, TYPE B S.F.	0831-0001 POST MOUNTED SIGNS, TYPE F S.F.
I	W3-1-(30)	ADVISORY SPEED 30 M.P.H.	30"x30"	6.25	4		25
J	R1-1	STOP	36"x36"	9	2	18	
K	W3-1A	STOP AHEAD (SYMBOL)	36"x36"	9	2	18	
TOTALS						36	25

MISCELLANEOUS

ITEM NUMBER UNIT	DESCRIPTION	QUAN.	LOCATION	REMARKS
9000-0001 EA.	FIBER-OPTIC SIGN (CROSSROAD W/VEHICLE ICON)	4	A A A A	
9000-0002 EA.	FIBER-OPTIC SIGN (TRAFFIC AHEAD)	2	A A	
9000-0003 EA.	COLLISION AVOIDANCE CONTROLLER ASSEMBLY, TYPE 1MOUNTING, WITH MODEM AND PHONE COMMUNICATIONS LINE	1	CC	
9000-0004 EA.	COLLISION AVOIDANCE CONTROLLER SOFTWARE	1	CC	
9000-0005 EA.	FIBER-OPTIC SIGN (CROSSING TRAFFIC)	2	A A	

TRAFFIC SIGNAL SUPPORTS

STRUCT. NO.	ITEM NUMBER UNIT	DESCRIPTION	QUAN.	ROUTE	STATION	SIDE	OFFSET	MAST ARM: ARM "A" H	K	L	SIGNAL LOCATION M	N	O	P	SIGN LOCATION R	S	T	ARM "B" W	L	SIGNAL LOCATION M	N	O	P	SIGN LOCATION R	S	T	ARM "C" Y	L	X	Z	STRAIN POLE: SHAFT H	DESIGN TENSION	K	SPAN STRUCT. TO STRUCT.	SIGNAL LOCATION M	N	O	P	SIGN LOCATION R	S	T	ARM "C" L	X	Z	PEDESTAL SHAFT H	K
1	4951-3102 EACH	TRAFFIC SIGNAL SUPPORT, 20' STRAIN POLE, 2000 LBS DESIGN TENSION (BREAKAWAY)	1	0038	842+56	RT	22'																								20'	2,000	7'														
2	4951-3102 EACH	TRAFFIC SIGNAL SUPPORT, 20' STRAIN POLE, 2000 LBS DESIGN TENSION (BREAKAWAY)	1	0038	845+09	RT	21'																								20'	2,000	7'														
3	4951-4010 EACH	TRAFFIC SIGNAL SUPPORT, 10' PEDESTAL (BREAKAWAY)	1	0038	847+29	RT	24'																																							10'	7'
4	4951-4010 EACH	TRAFFIC SIGNAL SUPPORT, 10' PEDESTAL (BREAKAWAY)	1	0038	848+77	LT	24'																																							10'	7'
5	4951-3102 EACH	TRAFFIC SIGNAL SUPPORT, 20' STRAIN POLE, 2000 LBS DESIGN TENSION (BREAKAWAY)	1	0038	848+96	LT	22'																								20'	2,000	7'														
6	4951-3102 EACH	TRAFFIC SIGNAL SUPPORT, 20' STRAIN POLE, 2000 LBS DESIGN TENSION (BREAKAWAY)	1	0038	852+24	LT	23'																								20'	2,000	7'														

NOTE: VERIFY FOUNDATION ELEVATIONS TO INSURE PROPER VERTICAL CLEARANCE.

PROFESSIONAL ENGINEER
MARK C. SZEWCOW
ENGINEER

DISTRICT	COUNTY	ROUTE	SECTION	SHE
10	BUTLER	0038	ITS	6 O
WASHINGTON TOWNSHIP				

REVISION NO.	REVISION	DATE

OPERATIONAL CHART

SIGNS	DETECTORS 1A/1B⑤	2A/2B⑥	3⑦	4A/4B⑥	5A/5B⑥	6⑦	7⑧	8⑦	9⑧	10⑦
G			ON④⑤			ON④⑤	ON②	ON⑤	ON②	ON⑤
A(R)							ON②	ON⑤		
A(L)									ON②	ON⑤
B(R)							ON③	ON⑤		
B(L)									ON③	ON⑤
H			ON④⑤			ON④⑤	ON②	ON⑤	ON②	ON⑤
C(R)									ON②	ON⑤
C(L)							ON②	ON⑤		
D(R)									ON③	ON⑤
D(L)							ON③	ON⑤		
E(R)	ON①②	ON③⑨	OFF							
E(L)				ON①②	ON③⑨	OFF				
F(R)				ON①②	ON③⑨	OFF				
F(L)	ON①②	ON③⑨	OFF							

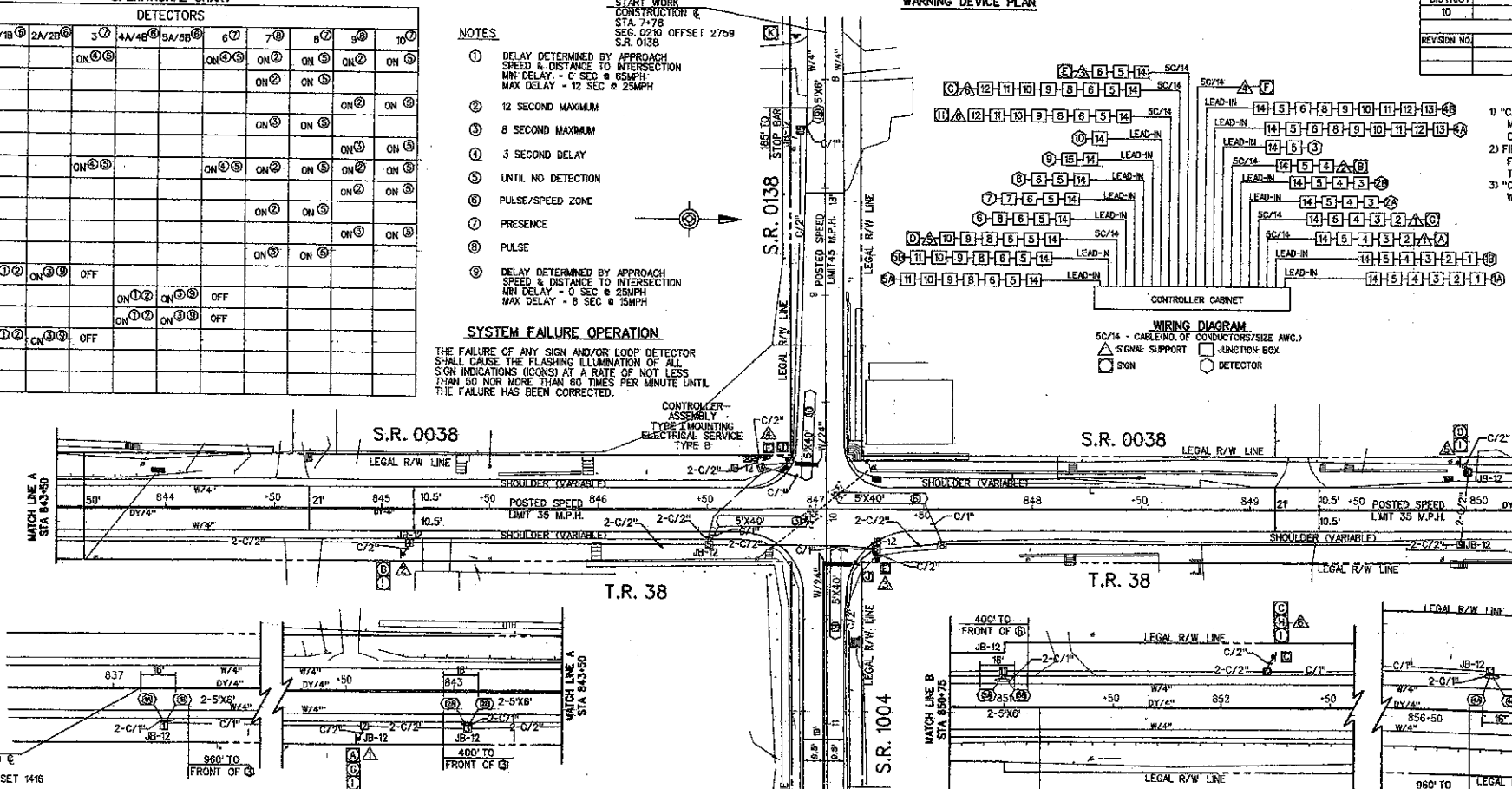
NOTES

1. DELAY DETERMINED BY APPROACH SPEED & DISTANCE TO INTERSECTION MIN DELAY - 0 SEC @ 65MPH MAX DELAY - 12 SEC @ 25MPH
2. 12 SECOND MAXIMUM
3. 8 SECOND MAXIMUM
4. 3 SECOND DELAY
5. UNTIL NO DETECTION
6. PULSE/SPEED ZONE
7. PRESENCE
8. PULSE
9. DELAY DETERMINED BY APPROACH SPEED & DISTANCE TO INTERSECTION MIN DELAY - 0 SEC @ 25MPH MAX DELAY - 8 SEC @ 15MPH

SYSTEM FAILURE OPERATION

THE FAILURE OF ANY SIGN AND/OR LOOP DETECTOR SHALL CAUSE THE FLASHING ILLUMINATION OF ALL SIGN INDICATIONS (ICONS) AT A RATE OF NOT LESS THAN 50 NOR MORE THAN 60 TIMES PER MINUTE UNTIL THE FAILURE HAS BEEN CORRECTED.

WARNING DEVICE PLAN



WIRING DIAGRAM

5C/14 - CABLE(NO. OF CONDUCTORS/SIZE AWG.)
SIGNAL SUPPORT
JUNCTION BOX
SIGN
DETECTOR

GENERAL NOTES

1) "CAR ICON" TO BE ILLUMINATED IN A STEADY MODE WHEN ON AS SPECIFIED IN THE OPERATIO CHART.
2) FIBER-OPTIC BUNDLES TO BE ARRANGED SO TH FAILURE OF ONE (1) LAMP WILL NOT EXTINGUISH THE LINE OF MESSAGE OR A PROTION THERE O
3) "CAR ICON" TO BE ILLUMINATED SEQUENTIALLY WHEN ON AS SPECIFIED IN THE OPERATIONAL C

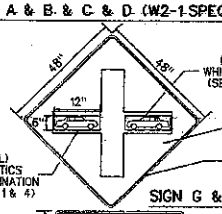
LEGEND

- POLE W/FIBER-OPTIC SIGN
- POST MOUNTED SIGN
- VEHICLE DETECTOR
- JUNCTION BOX
- C/2" — CONDUIT/SIZE
- CONTROLLER ASSEMBLY
- W/4" - SOLID WHITE LINE/WIDTH
- BW/4" - BROKEN WHITE LINE/WIDTH
- Y/4" - SOLID YELLOW LINE/WIDTH
- BY/4" - BROKEN YELLOW LINE/WIDTH
- FLASHER DEVICES (FOR INFORMATION ONLY)

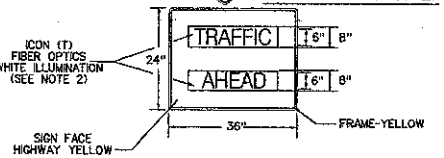
SIGNS

PLAN SYMBOL	SERIES DESIGNATION	SIZE W x H	DESCRIPTION	QUANTITY
A	W2-1 SPECIAL	48"x48"	CROSS ROAD W/VEHICLE ICON (FIBER-OPTIC)	1
B	W2-1 SPECIAL	48"x48"	CROSS ROAD W/VEHICLE ICON (FIBER-OPTIC)	1
C	W2-1 SPECIAL	48"x48"	CROSS ROAD W/VEHICLE ICON (FIBER-OPTIC)	1
D	W2-1 SPECIAL	48"x48"	CROSS ROAD W/VEHICLE ICON (FIBER-OPTIC)	1
E	SPECIAL	24"x36"	CROSSING TRAFFIC/VEHICLE ICON (FIBER-OPTIC)	1
F	SPECIAL	24"x36"	CROSSING TRAFFIC/VEHICLE ICON (FIBER-OPTIC)	1
G	SPECIAL	24"x36"	TRAFFIC AHEAD (FIBER-OPTIC)	1
H	SPECIAL	24"x36"	TRAFFIC AHEAD (FIBER-OPTIC)	1
I	W3-1-(30)	30"x30"	ADVISORY SPEED 30 M.P.H.	4
J	R1-1	36"x36"	STOP	2
K	W3-1A	36"x36"	STOP AHEAD (SYMBOL)	2

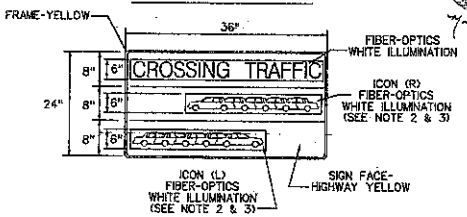
SIGN A & B & C & D (W2-1 SPECIAL)



SIGN G & H (SPECIAL)



SIGN E & F (SPECIAL)



County: BUTLER

Municipality: WASHINGTON TOWNSHIP

Intersection: S.R. 0038 AND S.R. 0138/S.R. 1004

Recommended: Michael J. [illegible] 4/12/[illegible]
District Traffic Engineer Date

Scale 0 25 50 75